REMARKS

Claim 40 has been amended to correct an obvious typographical error therein. No new matter has been added.

Claims 38-41 have been rejected under 35 USC 103(a) as being unpatentable over Yamashita et al in view of Shimada et al. Applicants once again respectfully traverse this ground of rejection and urge reconsideration in light of the following comments.

The present invention, in its broadest aspect, is directed to a method of driving a nematic liquid crystal or a liquid crystal display device having a liquid crystal panel sandwiching nematic liquid crystal between two electrodes that are disposed between two polarizing plates. The method comprises the steps of applying a voltage corresponding to image data between the two electrodes to thereby depict an image on the liquid crystal panel and applying an appropriate voltage between the two electrodes in each frame period to thereby erase the image depicted from the liquid crystal panel within the same frame period.

Another aspect of the present invention is directed to a method of driving a nematic liquid crystal for a liquid crystal display device having a nematic liquid crystal sandwiched between two electrodes that are disposed between two polarizing plates. This method comprises the steps of applying a first voltage corresponding to image data between the two electrodes in each frame period to drive the nematic liquid crystal to a state corresponding to the image data and applying a second predetermined voltage between the two electrodes in the same frame period to return the liquid crystal to a predetermined state.

With the present invention, since an image displayed on a liquid crystal panel in a frame period is erased within the same frame period, a very high response speed which is optimum for the reproduction of moving images can be obtained. The present invention not only allows the use of a nematic liquid

crystal in a simple matrix liquid crystal panel but also enables a much higher response speed, equivalent contrast ratio, equivalent or larger visual angle as compared with a conventional TFT liquid crystal panel and the present invention can be applied to a conventional TFT liquid crystal panel to improve the operating speed thereof. Lastly, the driving circuit used in the present invention can be realized at a cost equivalent to that of a conventional simple matrix driving system since the invention uses a lower number of different drive voltages and an easier driving timing as compared with those of a conventional active driving system. It is respectfully submitted that the prior art cited by the Examiner does not make a showing of prima facie obviousness under 35 USC 103(a) with respect to the presently claimed invention.

The Yamashita et al reference discloses a method for driving a liquid crystal display device having a liquid crystal panel sandwiching liquid crystal between two electrodes that are disposed between two polarizing plates. However, as admitted by the Examiner, this reference does not disclose applying an appropriate voltage in each frame period to thereby erase the image depicted on the liquid crystal panel within the same frame period. Shimada et al was cited by the Examiner to provide this teaching.

The Shimada et al reference discloses a method for driving an active matrix substrate including a plurality of scanning electrode lines, a plurality of data electrode lines, and a plurality of pixel electrodes respectively connected to the scanning electrode lines and the data electrode lines via a ferroelectric material. The object of this reference is to prevent a deterioration of the memory function of a nonlinear device made of a ferroelectric material when driving an active matrix substrate (column 3, lines 36-40). In order to achieve this purpose, it is essential that a structure is used which connects a TN liquid crystal to the ferroelectric layer 2 (column 4, lines 31-36). Therefore, in order to use the TN

liquid crystal of Shimada in the liquid crystal display panel of Yamashita et al, the ferroelectric film connected to the liquid crystal must be added to the display panel of Yamashita et al. Since the devices of Shimada et al and Yamashita et al are driven differently, there is no teaching contained in Shimada et al which would suggest that the active matrix substrate disclosed in Shimada et al could be substituted for or combined with the arrangement shown in Yamashita et al.

The Examiner has stated that Shimada et al further teaches that a constant voltage erases the image display in column 13, line 66, through column 14, line 21, of this reference. However, Applicants can find no such teaching in this part of the description of Shimada et al. If the word "erase" is contained in this part of the description, the Examiner is respectfully requested to point it out. If the Examiner is considering the word "erasing" to be equivalent to the term "reset" in Shimada et al, then this is an incorrect assumption.

In Shimada et al, the word "reset" is used exclusively in conjunction with the characteristics of a nonlinear device made of a ferroelectric material in order to make uniform the voltage of the nonlinear device in non-selected periods and thereby remove unstable contrasts so that the characteristics of the nonlinear device is reset periodically. Therefore, Shimada et al has no disclosure of "applying the appropriate voltage between the two electrodes in each frame period to thereby erase the image depicted on the liquid crystal panel within the same frame."

The references cited by the Examiner do not present a showing of prima facie obviousness under 35 USC 103(a). Given the two different structures of the display devices in Yamashita et al and Shimada et al, there is no suggestion in the references that the devices are exchangeable or combinable with each other. Moreover, neither of the references cited by the Examiner disclose the step of "applying appropriate voltage between the two electrodes in each frame period to

thereby erase the image depicted on the liquid crystal panel within the same frame period." Therefore, the presently claimed invention clearly is patentably distinguishable over the prior art cited by the Examiner. Reconsideration of the present application and the passing of it to issue is respectfully solicited.

Respectfully submitted,

Terryence F. Chapman

TFC/smd

FLYNN, THIEL, BOUTELL & TANIS, P.C.
2026 Rambling Road
Kalamazoo, MI 49008-1631
Phone: (269) 381-1156
Fax: (269) 381-5465

David G. Boutell	Reg. No. 25 072
Terryence F. Chapman	Reg. No. 32 549
Mark L. Maki	Reg. No. 36 589
Liane L. Churney	Reg. No. 40 694
John A. Waters	Reg. No. 24 802
Brian R. Tumm	Reg. No. 36 328
Donald J. Wallace	Reg. No. 43 977
Stephen C. Holwerda	Reg. No. 57 391
Dale H. Thiel	Reg. No. 24 323
Sidney B. Williams, Jr.	Reg. No. 24 949
Heon Jekal	Reg. No. L0379*

*limited recognition number

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